

TABLE 1.—Solar radiation intensities during February, 1917—Continued.

Santa Fe, N. Mex.										
Date.	Sun's zenith distance.									
	0.0°	48.3°	60.0°	66.5°	70.7°	73.6°	75.7°	77.4°	78.7°	79.8°
	Air mass.									
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
A. M.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Feb. 1.....			1.64	1.57	1.49	1.42	1.36			
5.....			1.47			1.32	1.27			
8.....		1.55	1.50	1.44	1.38	1.26				
9.....		1.61				1.36	1.29			
13.....				1.44	1.37	1.30	1.24			
16.....			1.49	1.39	1.31					
Monthly means.....		(1.58)	1.52	1.46	1.39	1.33	1.29			
Departure from 5-year normal.....		±0.00	+0.05	+0.07	+0.08	+0.04	+0.04			
P. M.										
Feb. 8.....			1.46	1.41	1.35		1.26	1.16	1.08	
Monthly means.....			(1.46)	(1.41)	(1.35)		(1.26)	(1.16)	1.08)	

Table 2 shows very low vapor pressures at the above stations on the days when these high readings were obtained.

TABLE 2.—Vapor pressures at pyrheliometric stations on days when solar radiation intensities were measured.

Washington, D. C.			Madison, Wis.			Lincoln, Nebr.			Santa Fe, N. Mex.		
Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	8 p.m.	Dates.	8 a.m.	p.m.
1917.	mm.	mm.	1917.	mm.	mm.	1917.	mm.	mm.	1917.	mm.	mm.
Feb. 1.....	8.81	2.16	Feb. 2.....	0.20	0.46	Feb. 1.....	0.23	0.33	Feb. 1.....	1.19	1.02
2.....	1.02	0.86	8.....	1.96	0.53	2.....	0.23	0.53	5.....	1.60	2.62
3.....	0.51	0.97	9.....	0.48	0.71	8.....	1.78	1.24	8.....	2.18	2.26
5.....	0.66	0.58	10.....	0.48	0.71	10.....	1.78	1.78	9.....	2.06	2.16
6.....	1.12	1.78	17.....	3.81	1.37	15.....	3.45	3.15	13.....	2.36	3.63
10.....	0.71	0.97	20.....	1.02	1.32	16.....	3.15	3.99	16.....	1.78	2.36
12.....	0.81	0.64	21.....	2.26	1.45	23.....	0.97	1.37			
13.....	0.56	1.45	24.....	0.86	1.07	26.....	3.15	1.78			
17.....	3.63	4.17	27.....	0.36	1.24						
			28.....	1.32	1.78						

Table 3 shows about the normal amount of radiation for the month at Washington and Lincoln, and an excess of about 17 per cent at Madison.

TABLE 3.—Daily totals and departures of solar and sky radiation during February, 1917.

[Gram-calories per square centimeter of horizontal surface.]

Day of month.	Daily totals.			Departures from normal.			Excess or deficiency since first of month.		
	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.	Washington.	Madison.	Lincoln.
Feb. 1....	calories.	calories.	calories.	calories.	calories.	calories.	calories.	calories.	calories.
2.....	206	320	351	0	115	97	0	115	97
3.....	204	325	303	86	117	46	86	232	143
4.....	359	280	258	148	70	-2	234	302	141
5.....	296	270	211	83	57	-52	317	359	89
6.....	326	306	267	111	90	1	428	449	90
7.....	362	235	155	144	16	-115	572	465	-25
8.....	231	263	294	9	40	21	581	505	-4
9.....	144	336	280	-81	110	4	500	615	0
10.....	154	354	142	-74	125	-138	420	740	-138
11.....	373	359	336	142	126	53	568	866	-85
12.....	361	360	328	127	124	42	695	990	-43
13.....	332	271	227	94	32	-63	789	1,022	-106
14.....	340	177	193	99	-66	-100	888	956	-206
15.....	278	262	309	34	16	13	922	972	-193
16.....	28	115	231	-219	-134	-68	703	838	-261
17.....	149	320	328	-102	67	26	601	935	-235
18.....	309	347	341	55	91	36	656	926	-199
19.....	116	308	198	-141	49	-110	515	1,045	-309
20.....	99	85	298	-161	-178	-13	354	867	-322
21.....	67	394	342	-197	128	28	157	995	-294
Decade departure.....							-411	129	-209
22.....	245	220	371	-22	-49	54	135	946	-240
23.....	381	267	292	111	-6	-28	246	940	-268
24.....	142	311	368	-132	35	45	114	975	-223
25.....	278	402	306	-7	123	-20	107	1,038	-243
26.....	372	195	335	92	-87	7	199	1,011	-236
27.....	196	278	341	-88	-8	10	111	1,033	-226
28.....	182	409	355	-106	119	21	5	1,122	-205
Decade departure.....							-261	1,207	-307
Excess or deficiency since first of year. (Per cent.).....							-793	+2,085	-407
							-6.4	+17.3	-2.8

In Table 4 the high value of the solar constant obtained from the A. M. measurements of February 1 at Lincoln is probably due to the presence of local smoke during the morning, and its passing away before noon. Likewise, the low value of the solar constant obtained from the A. M. measurements of February 8 at Santa Fe is probably due to the effect of local smoke. It will be noted that in general the solar constant values obtained are slightly higher than Abbot's average value.

TABLE 4.—Solar radiation intensities for zenithal sun reduced to mean solar distance of the earth, and approximate values of the solar constant.

[Gram-calories per minute per square centimeter of normal surface.]

Station.	Date.	Radiation intensity.		Solar constant.
		m = 1	m = 0	
Washington, D. C.	1917.	calories.	calories.	calories.
	Feb. 6, a. m. and p. m.	1.54	1.30	1.88
	10, a. m.	1.51	1.64	1.91
Madison, Wis.	Feb. 2, a. m.	1.62	1.82	1.88
	9, a. m.	1.71	1.92	1.98
	17, p. m.	1.63	1.85	1.93
	27, p. m.	1.65	1.88	1.95
Lincoln, Nebr.	Feb. 1, a. m.	1.66	2.06	2.12
	1, p. m.	1.75	1.95	2.01
	2, a. m.	1.75	1.98	2.04
	10, p. m.	1.64	1.81	1.89
Santa Fe, N. Mex.	Feb. 1, a. m.	1.75	1.92	1.99
	8, a. m.	1.57	1.70	1.78

Skylight polarization measurements made at Washington on four days when there was no snow on the ground give an average of 65 per cent, and a maximum of 69 per cent on the 10th. These are about average values for Washington for February.

ERRATUM.

In the MONTHLY WEATHER REVIEW for November, 1916, p. 615, column 2, the equation for computing the sun's hour angle from the meridian should read

$$\cos h = \frac{\sin a - \sin \phi \sin \delta}{\cos \phi \cos \delta}$$

This correction should also be made where this equation occurs in the reprint of the article, viz, at the bottom of page 6.

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THE SMOKE CLOUD AND THE HIGH HAZE OF 1916.

By HERBERT H. KIMBALL, Professor of Meteorology.

[Dated: Weather Bureau, Washington, D. C., Mar. 27, 1917.]

Description of the smoke cloud.

During the last four or five days in July, 1916, a dense cloud of smoke overspread eastern New York and the New England States. Apparently it was first observed in northeastern New York on July 27, but its maximum effect appears to have been observed in northern New England on July 30. This day was described as "dark" at Gardiner and Eastport, Me., and Westboro, Mass., and as "yellow" at three Weather Bureau stations in Maine, four in New Hampshire, two in Vermont, and one each in Massachusetts, Rhode Island, and Connecticut.

During this same period smoke, mostly from forest fires, was recorded at many stations in Michigan, and haze or smoke, but usually haze, was recorded at a few stations